

What is claimed is:

1. A reciprocating compressor comprising:

(a) a motor unit;

(b) a compressing unit disposed over said motor unit and  
5 including:

(b-1) a compressing room;

(b-2) a piston reciprocating in said compressing room;

(b-3) a crankshaft for converting rotating action of said motor  
unit into reciprocating action of said piston; and

10 (c) an enclosed container for accommodating said motor unit and  
said compressing unit and for pooling lubricant oil,

wherein said crankshaft including:

(b-3-1) a centrifugal pump disposed at a lower section of said  
crankshaft and being open into the lubricant oil pooled in said container; and

15 (b-3-2) a pair of spiral pumps, functionally independent,  
disposed at a middle section of said crankshaft, communicating with said  
centrifugal pump, and having leading grooves running in an opposite direction  
to each other,

wherein a pair of vertical holes, functionally independent, are  
20 prepared at an upper section of said crankshaft, the pair of vertical holes open  
into said container and communicate with said spiral pumps respectively.

2. The reciprocating compressor of claim 1, wherein said centrifugal  
pump includes a throttle section which communicates with the lubricant oil  
25 pooled in said container, and a hollow cylinder extending upward from a lower  
end of said crankshaft and having an axis slanting toward an outer wall of said  
crankshaft.

3. The reciprocating compressor of claim 1, wherein a vent hole communicating with said container is provided at an upper section of said centrifugal pump.

5

4. The reciprocating compressor of claim 1, wherein said crankshaft further includes an eccentric shaft, a sub-shaft section and a main-shaft section which sandwich vertically the eccentric shaft,

wherein said compressing unit includes a sub-bearing and a  
10 main-bearing, both of which are formed to cross with an axis of said compressing room at substantial right angles, for supporting said sub-shaft section and said main-shaft section respectively, and a linking section that links said piston to said eccentric shaft.

15 5. The reciprocating compressor of claim 4, wherein a pair of helical grooves, functionally independent, are prepared on an outer wall of said sub-bearing, said helical grooves include leading grooves running in an opposite direction to each other and communicate with the pair of vertical holes respectively.

20

6. The reciprocating compressor of claim 1, wherein said motor unit is a three-phase induction motor.

7. The reciprocating compressor of claim 1, wherein said motor unit is a  
25 single-phase resistant-start induction motor.